trace which, according to all three authors, is an intracellular formation.

Senion rejects vitalism as scornfully as any orthodox mechanist, calling it ' the worst back-sliding into which scientific thought can degenerate'. And he ignores the teleological appearance of so much of organic activity. For hini^the engram is a chemical substance deposited within a cell; and he regards a gene as essentially of the same nature with an engram or a number of engrains closely packed together.

Rignano insists much upon the teleological nature of both outward behaviour and all the main types of internal processes, morphogenesis, regulation, Sec. ; thus [4] the purposiveness of ontogenetic development is too evident to be denied seriously. It results from the convergence of manifold morphogenetic activities towards one sole e^d, towards a marvellous functional unity, every part of which serves the maintenance of life. . . . Nothing even remotely analogous is to be seen in any physico-chemical process of the inorganic world. But he explains all the purposive activities by assuming a special form of energy peculiar to living things. He calls his view energetic-vitalistic. For him each engram is analogous to an electric accumulator, with this further peculiarity: that the current w[r]hich charges the accumulator is in each case of specific or unique quality, and causes a deposit of unique quality; which in turn, when re-excited, sends out a current of the same unique quality as the current which caused the deposit.[1]

[1] After reviewing various goal-seeking activities of animals,

Rignano asks : * Is it in keeping with the true scientific spirit to persist in denying that we have here something substantially different from ordinary phenomena of a purely physico-chemical nature, and to continue to contend that physico-